We claim:

1. An ignitor distinguishing control system for distinguishing the type of ignitor within a gas appliance, the ignitor powered by a power source having a power source voltage, v, connected thereto and an ignitor current having a magnitude, the system comprising:

ignitor distinguishing circuit means in communication with the ignitor and having a signal representative of the ignitor current through the ignitor output therefrom; and

a controller in communication with the ignitor distinguishing circuit means and adapted to determine the type of the ignitor based on the signal received from the ignitor distinguishing circuit means.

2. The igniter distinguishing control system of claim 1, wherein the igniter operates between an in-rush state having a beginning and an end and a steady state, and wherein the controller comprises:

storage means for storing a plurality of control programs for controlling a plurality of corresponding ignitor types; and

execution means for executing the control programs corresponding to the type of ignitor determined by the controller.

3. The ignitor distinguishing control system of claim 2, wherein the plurality of control programs comprise a silicon carbide control programs, a silicon nitride control programs, and a mini-silicon carbide control programs, and wherein the plurality of corresponding ignitor types comprise a silicon carbide ignitor, a silicon nitride ignitor, and a mini-silicon carbide ignitor, respectively.

4. The ignitor distinguishing control system of claim 3, wherein the controller comprises a comparator adapted to compare the magnitude of the igniter current of the signal at the beginning of the in-rush state to the magnitude of the ignitor current of the signal at the end of the in-rush state, and wherein the execution means comprises means for executing the silicon carbide ignitor control program when the igniter current compared by the comparator increases between the beginning and the end of the in-rush state.

5. The ignitor distinguishing control system of claim 4, wherein the storage means comprises means for storing an ignitor current value during steady state for each of the plurality of ignitor types and for a plurality of different power source voltages, vp, and wherein the comparator is further adapted to compare the magnitude of the ignitor current of the signal during the steady state with the ignitor current value stored within the storage means for the power source voltage, vp, equal to the power source voltage, v, of the ignitor distinguishing control system, and wherein the execution means further comprises means for executing the control program for the ignitor type having the ignitor current value equal to the magnitude of the ignitor current.

6. The ignitor distinguishing control system of claim 3, wherein the controller further comprises error message generation means for generating an error message to an operator of the appliance if no ignitor type is determined thereby.

7. The ignitor distinguishing control system of claim 1, wherein the ignitor has a first terminal and a second terminal, and the controller is a microprocessor, and wherein the ignitor distinguishing circuit means comprises:

an opto-isolator having a first and second input and a first and second output, the first output connected to the microprocessor, the second output connected to a ground, and the first input connected to the first terminal of the ignitor; and

a current-to-voltage divider connected between the second terminal of the ignitor and the second input of the opto-isolator.

8. The ignitor distinguishing control system of claim 7, wherein the current-to-voltage divider comprises:

a resistor connected between the second terminal of the ignitor and the power source; and

a transistor connected in parallel with the resistor between the second terminal of the ignitor and the second input of the opto-isolator.

9. The ignitor distinguishing control system of claim 1, wherein the ignitor has a first terminal and a second terminal, and the controller is a microprocessor, and wherein the ignitor distinguishing circuit means comprises:

a current-to-voltage divider connected to the second terminal of the ignitor; and

a voltage divider connected in series between the microprocessor and the current-to-voltage divider.

10. The ignitor distinguishing control system of claim 9, wherein the current-to-voltage divider comprises:

a transformer having a primary winding and a secondary winding, the transformer connected between the second terminal of the ignitor and the power source; and

a resistor connected in parallel with the transformer between the secondary winding of the transformer and the voltage divider.

11. A method of distinguishing the type of ignitor within a gas appliance, the ignitor powered by a power source having a power source voltage, v, and an ignitor current having a magnitude, the method comprising:

receiving a signal from an ignitor distinguishing circuit connected to the ignitor; and

determining the type of ignitor based on the signal received from the ignitor distinguishing circuit.

12. The method of claim 11, further comprising:

storing a plurality of control programs for controlling a plurality of corresponding ignitor types; and

executing the control programs corresponding to the type of ignitor determined.

13. The method of claim 12, wherein the plurality of control programs comprise a silicon carbide control programs, a silicon nitride control programs, and a mini-silicon carbide control programs, the plurality of corresponding ignitor types comprise a silicon carbide ignitor, a silicon nitride ignitor, and a mini-silicon carbide ignitor, respectively, and the ignitor operates between an in-rush state having a beginning and an end and a steady state, and wherein the method further comprises:

comparing the magnitude of the ignitor current at the beginning of the in-rush state to the magnitude of the ignitor current at the end of the in-rush state; and

executing the silicon carbide ignitor control program when the magnitude of the ignitor current increases between the beginning and the end of the in-rush state.

14. The method of claim 13, further comprising:

storing an ignitor current value during steady state for each of the plurality of ignitor types and for a plurality of power source voltages, vp;

comparing the magnitude of the ignitor current of the signal during the steady state with the ignitor current value stored within the storage means for the power source voltage, vp, equal to the power source voltage, v, of the ignitor; and

executing the control program for the ignitor type having the ignitor current value equal to the magnitude of the ignitor current.

15. The method of claim 14, further comprising generating an error message to an operator of the appliance if no ignitor type is determined.